

U.S. Department of Commerce, Patent and Trademark Office

Atty Docket No.

Serial No.

M-12246 US

09/994,578

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

Applicant(s)

Strohhofer, Christof et al.

Filing Date

November 26, 2001

Group

Unknown

## U.S. Patent Documents

| *Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date If Appropriate |
|-------------------|-----------------|------|------|-------|----------|----------------------------|
|                   | AA              |      |      |       |          |                            |
|                   | AB              |      |      |       |          |                            |
|                   | AC              |      |      |       |          |                            |
|                   | AD              |      |      |       |          |                            |
|                   | AE              |      |      |       |          |                            |
|                   | AF              |      |      |       |          |                            |
|                   | AG              |      |      |       |          |                            |
|                   | AH              |      |      |       |          |                            |
|                   | AI              |      |      |       |          |                            |
|                   | AJ              |      |      |       |          |                            |
|                   | AK              |      |      |       |          |                            |

## Foreign Patent Documents

| Document | Date | Country | Class | Subclass | Translation |
|----------|------|---------|-------|----------|-------------|
|          |      |         |       |          | Yes No      |
| AL       |      |         |       |          |             |
| AM       |      |         |       |          |             |
| AN       |      |         |       |          |             |
| AO       |      |         |       |          |             |
| AP       |      |         |       |          |             |

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

|            |    |   |
|------------|----|---|
| <i>D/H</i> | AQ | C. Strohhofer, A. Polman, "Energy transfer to Er <sup>3+</sup> in Ag ion-exchanged glass", FOM Institute for Atomic and Molecular Physics, 10 pages   |
| <i>D/H</i> | AR | Mesnaoui et al., "Spectroscopic properties of Ag <sup>+</sup> ions in phospage glasses of NaPO <sub>3</sub> -AgPO <sub>3</sub> system", EUROPEAN JOURNAL OF SOLID STATE AND INORGANIC CHEMISTRY, Vol. 29, pages 1001-1013, 1992, 14 pages |
| <i>D/H</i> | AS | P. Laporta et al., "Diode-pumped cw bulk Er: Yb: glass laser", 1992 Optics Letters/ Vol. 16, No. 24/ Dec. 15, 1991, 6 pages   |

Examiner

Date Considered

6/23/2003

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.

|  |  |  |  |                 |  |                                |  |
|--|--|--|--|-----------------|--|--------------------------------|--|
| U.S. Department of Commerce, Patent and Trademark Office                           |  |  |  | Atty Docket No. |  | Serial No.                     |  |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT<br>(Use several sheets if necessary) |  |  |  | M-12246 US      |  | 09994,578                      |  |
|  |  |  |  | Applicant(s)    |  | Strohhofer, Christopher et al. |  |
|  |  |  |  | Filing Date     |  | November 26, 2001              |  |
|  |  |  |  | Group           |  |                                |  |

U.S. Patent Documents

| *Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date If Appropriate |
|-------------------|-----------------|------|------|-------|----------|----------------------------|
|                   | AA              |      |      |       |          |                            |
|                   | AB              |      |      |       |          |                            |
|                   | AC              |      |      |       |          |                            |
|                   | AD              |      |      |       |          |                            |
|                   | AE              |      |      |       |          |                            |
|                   | AF              |      |      |       |          |                            |
|                   | AG              |      |      |       |          |                            |
|                   | AH              |      |      |       |          |                            |
|                   | AI              |      |      |       |          |                            |
|                   | AJ              |      |      |       |          |                            |
|                   | AK              |      |      |       |          |                            |

Foreign Patent Documents

| Document | Date | Country | Class | Subclass | Translation |    |
|----------|------|---------|-------|----------|-------------|----|
|          |      |         |       |          | Yes         | No |
| AL       |      |         |       |          |             |    |
| AM       |      |         |       |          |             |    |
| AN       |      |         |       |          |             |    |
| AO       |      |         |       |          |             |    |
| AP       |      |         |       |          |             |    |

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

|           |    |   |
|-----------|----|---|
| <i>DL</i> | AQ | Michael R. Lange et al., "High Gain Ultra-Short Length Phosphate Glass Erbium-Doped Fiber Amplifier Material", OSA Optial Fiber Communications (OFC) 2002, 3 pages  |
| <i>DL</i> | AR | Barbier, D. et al., "Amplifying Four-Wavelength Combiner, Based on Erbium/Ytterbium-Doped Waveguide Amplifiers and Integrated Splitters", IEEE PHOTONICS TECHNOLOGY LETTERS, Vol. 9, pages 315-317, 1997, 4 pages |
| <i>DL</i> | AS | L. H. Slooff et al., "Optical properties of Erbium-doped organic polydentate cage complexes", J. Appl. Phys. 83, Jan. 1998, pages 497-503   |

Examiner *[Signature]* Date Considered *6/23/2003*

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.

U.S. Department of Commerce, Patent and Trademark Office

Atty Docket No.

Serial No.

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

M-12246 US

09/994 678

(Use several sheets if necessary)

Applicant(s)

Strohhofer, Christof et al

Filing Date

November 26, 2001

Group

## U.S. Patent Documents

| *Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date If Appropriate |
|-------------------|-----------------|------|------|-------|----------|----------------------------|
|                   | AA              |      |      |       |          |                            |
|                   | AB              |      |      |       |          |                            |
|                   | AC              |      |      |       |          |                            |
|                   | AD              |      |      |       |          |                            |
|                   | AE              |      |      |       |          |                            |
|                   | AF              |      |      |       |          |                            |
|                   | AG              |      |      |       |          |                            |
|                   | AH              |      |      |       |          |                            |
|                   | AI              |      |      |       |          |                            |
|                   | AJ              |      |      |       |          |                            |
|                   | AK              |      |      |       |          |                            |

## Foreign Patent Documents

| Document | Date | Country | Class | Subclass | Translation |    |
|----------|------|---------|-------|----------|-------------|----|
|          |      |         |       |          | Yes         | No |
| AL       |      |         |       |          |             |    |
| AM       |      |         |       |          |             |    |
| AN       |      |         |       |          |             |    |
| AO       |      |         |       |          |             |    |
| AP       |      |         |       |          |             |    |

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

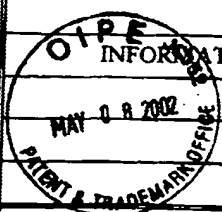
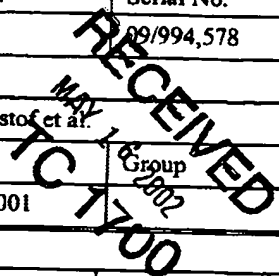


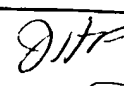
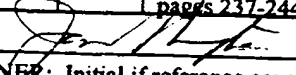
|           |    |  |
|-----------|----|--|
| <i>JH</i> | AQ | Fujii et al., "1.54 $\mu\text{m}$ photoluminescence of $\text{Er}^{3+}$ doped into $\text{SiO}_2$ films containing Si nanocrystals: Evidence for energy transfer from Si nanocrystals to $\text{Er}^{3+}$ ", Appl. Phys. Lett. 71 (9), September 1997, pages 1198-1200 |
| <i>JH</i> | AR | Ramaswamy et al., "Ion-Exchanged Glass Waveguides: A Review", Journal of Lightwave Technology, Vol. 6 No. 6, pages 984-1001, 1988  |
| <i>JH</i> | AS | Meijerink et al., LUMINESCENCE OF $\text{Ag}^+$ IN CRYSTALLINE AND GLASSY $\text{SrB}_4\text{O}_7$ , Journal of Physics and Chemistry of Solids, Vol. 54, No. 8, pages 901-906, 1993   |

Examiner

Date Considered

4/23/2003

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.

|   |   |  |                           |                 |       |                             |                            |
|---|---|--|---------------------------|-----------------|-------|-----------------------------|----------------------------|
| U.S. Department of Commerce, Patent and Trademark Office  |   |  |                           | Atty Docket No. |       | Serial No.                  |                            |
|  INFORMATION DISCLOSURE STATEMENT BY APPLICANT<br>(Use several sheets if necessary)  |   |  |                           | M-12246 US      |       | 99/994,578                  |                            |
|   |   |  |                           | Applicant(s)    |       | Strohhofer, Christof et al. |                            |
|   |   |  |                           | Filing Date     |       | November 26, 2001           |                            |
|   |   |  |                           |                 |       | Group                       |                            |
|    |   |  |                           |                 |       |                             |                            |
| U.S. Patent Documents   |   |  |                           |                 |       |                             |                            |
| *Examiner Initial   |   | Document Number  | Date                      | Name            | Class | Subclass                    | Filing Date If Appropriate |
|   | AA  |  |                           |                 |       |                             |                            |
|   | AB  |  |                           |                 |       |                             |                            |
|   | AC  |  |                           |                 |       |                             |                            |
|   | AD  |  |                           |                 |       |                             |                            |
|   | AE  |  |                           |                 |       |                             |                            |
|   | AF  |  |                           |                 |       |                             |                            |
|   | AG  |  |                           |                 |       |                             |                            |
|   | AH  |  |                           |                 |       |                             |                            |
|   | AI  |  |                           |                 |       |                             |                            |
|   | AJ  |  |                           |                 |       |                             |                            |
|   | AK  |  |                           |                 |       |                             |                            |
| Foreign Patent Documents  |   |  |                           |                 |       |                             |                            |
|   |   | Document   | Date                      | Country         | Class | Subclass                    | Translation                |
|   | AL  |  |                           |                 |       |                             | Yes No                     |
|   | AM  |  |                           |                 |       |                             |                            |
|   | AN  |  |                           |                 |       |                             |                            |
|   | AO  |  |                           |                 |       |                             |                            |
|   | AP  |  |                           |                 |       |                             |                            |
| OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)  |   |  |                           |                 |       |                             |                            |
|    | AQ  | Hayakawa et al., "Enhanced fluorescence from Eu <sup>3+</sup> owing to surface plasma oscillation of silver particles in glass", Journal of Non-Crystalline Solids 259, pages 16-22, 1999  |                           |                 |       |                             |                            |
|    | AR  | Hayakawa et al., "Field enhancement effect of small Ag particles on the fluorescence from Eu <sup>3+</sup> -doped SiO <sub>2</sub> glass", Applied Physics Letters, Vol. 74, No. 11, 15 March 1999, Pages 1513-1515                              |                           |                 |       |                             |                            |
|    | AS  | Peters et al., "Formation mechanism of silver nanocrystals made by ion irradiation of Na <sup>+</sup> ↔ Ag <sup>+</sup> ion-exchanged sodalime silicate glass", Nuclear Instruments and Methods in Physics Research B 168, (2000), pages 237-244 |                           |                 |       |                             |                            |
| Examiner  |  |  | Date Considered 6/23/2003 |                 |       |                             |                            |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant. |   |  |                           |                 |       |                             |                            |

|  |  |  |  |                 |  |                             |  |
|--|--|--|--|-----------------|--|-----------------------------|--|
| U.S. Department of Commerce, Patent and Trademark Office |  |  |  | Atty Docket No. |  | Serial No.                  |  |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT            |  |  |  | M-12246 US      |  | 09/994,578                  |  |
| (Use several sheets if necessary)                        |  |  |  | Applicant(s)    |  | Strohhofer, Christof et al. |  |
|  |  |  |  | Filing Date     |  | November 26, 2001           |  |
|  |  |  |  | Group           |  |                             |  |

**U.S. Patent Documents**

| *Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date If Appropriate |
|-------------------|-----------------|------|------|-------|----------|----------------------------|
|                   | AA              |      |      |       |          |                            |
|                   | AB              |      |      |       |          |                            |
|                   | AC              |      |      |       |          |                            |
|                   | AD              |      |      |       |          |                            |
|                   | AE              |      |      |       |          |                            |
|                   | AF              |      |      |       |          |                            |
|                   | AG              |      |      |       |          |                            |
|                   | AH              |      |      |       |          |                            |
|                   | AI              |      |      |       |          |                            |
|                   | AJ              |      |      |       |          |                            |
|                   | AK              |      |      |       |          |                            |

**Foreign Patent Documents**

|  | Document | Date | Country | Class | Subclass | Translation |    |
|--|----------|------|---------|-------|----------|-------------|----|
|  |          |      |         |       |          | Yes         | No |
|  | AL       |      |         |       |          |             |    |
|  | AM       |      |         |       |          |             |    |
|  | AN       |      |         |       |          |             |    |
|  | AO       |      |         |       |          |             |    |
|  | AP       |      |         |       |          |             |    |

**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**

|            |    |  |
|------------|----|--|
| <i>JLB</i> | AQ | Borsella, E., "Structural incorporation of silver in soda-lime glass by the ion-exchange process: a photoluminescence spectroscopy study", Applied Physics A 71, pages 125-132, 2000 |
| <i>JLB</i> | AR | Villegas et al., "Optical spectroscopy of a soda lime glass exchanged with silver", Physics and Chemistry of Glasses 37(6), 1996, pages 248-253                                      |
| <i>JLB</i> | AS | Flytzanis et al., "Nonlinear Optics in Composite Materials", E. Wolf, Progress in Optics XXIX © Elsevier Science Publishers B.V., 1991, pages 323-425                                |

Examiner *JLB* Date Considered *6/23/2003*

**\*EXAMINER.** Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.

U.S. Department of Commerce, Patent and Trademark Office

Atty Docket No.

Serial No.

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

M-12246 US

09/994,578

(Use several sheets if necessary)

Applicant(s)

Strohhofer, Christof et al.

Filing Date

November 26, 2001

Group

## U.S. Patent Documents

| *Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date If Appropriate |
|-------------------|-----------------|------|------|-------|----------|----------------------------|
|                   | AA              |      |      |       |          |                            |
|                   | AB              |      |      |       |          |                            |
|                   | AC              |      |      |       |          |                            |
|                   | AD              |      |      |       |          |                            |
|                   | AE              |      |      |       |          |                            |
|                   | AF              |      |      |       |          |                            |
|                   | AG              |      |      |       |          |                            |
|                   | AH              |      |      |       |          |                            |
|                   | AI              |      |      |       |          |                            |
|                   | AJ              |      |      |       |          |                            |
|                   | AK              |      |      |       |          |                            |

## Foreign Patent Documents

|  | Document | Date | Country | Class | Subclass | Translation |    |
|--|----------|------|---------|-------|----------|-------------|----|
|  |          |      |         |       |          | Yes         | No |
|  | AL       |      |         |       |          |             |    |
|  | AM       |      |         |       |          |             |    |
|  | AN       |      |         |       |          |             |    |
|  | AO       |      |         |       |          |             |    |
|  | AP       |      |         |       |          |             |    |

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

|            |    |   |
|------------|----|---|
| <i>JMS</i> | AQ | Ohtsuki et al., "Gain Characteristics of a high concentration Er <sup>3+</sup> -doped phosphate glass waveguide", J. Appl. Phys. 78(6), Physics, 1995, pages 3617-3621                                |
| <i>JMS</i> | AR | Delavaux et al., "Integrated optics erbium ytterbium amplifier system in 10 Gb/s fiber transmission experiment", 22 <sup>nd</sup> European Conference on optical Communication-ECOC'96, Oslo, 4 pages |
|            | AS |   |

Examiner

Date Considered

6/23/2003

\*EXAMINER Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.